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# INTERNATIONAL DECADE FOR NATURAL DISASTER REDUCTION

## Report of the Secretary-General

SUMMARY

In accordance with requests contained in resolutions 44/236 of 22 December 1989 and 45/185 of 21 December 1990, the present report contains information on the implementation of the plan of action for the International Decade for Natural Disaster Reduction. It reviews activities undertaken at the country level and by organizations of the United Nations system, and also outlines organizational and financial arrangements.

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# I. INTRODUCTION

1. In designating the 1990s as the International Decade for Natural Disaster Reduction in its resolution 44/236 of 22 December 1989, the General Assembly decided to include on the agenda of its forty-sixth session an item entitled "International Decade for Natural Disaster Reduction" and requested the Secretary-General to report biennially on the activities of the Decade to the Assembly through the Economic and Social Council. At its forty-fifth session, the General Assembly, taking note of the progress report submitted by the Secretary-General (A/45/621), in its resolution 45/185 of 21 December 1990 also requested the Secretary-General to report on the implementation of the programmes and activities of the Decade.

2. It will be recalled that the General Assembly's recommendations on the implementation of the Decade were contained in the International Framework of Action for the International Decade for Natural Disaster Reduction annexed to resolution 44/236, which also defined the organizational arrangements for the Decade. The present report contains information available as at 23 May 1991 on the implementation of programmes and activities of the Decade and on organizational and financial arrangements. An addendum will be issued later in the year providing up-to-date information and also making available the annual report of the Scientific and Technical Committee, which is also requested by the General Assembly in resolution 44/236.

# II. INTERNATIONAL FRAMEWORK OF ACTION FOR THE DECADE

## A. General

3. In the annex to resolution 44/236, the General Assembly established the International Framework of Action for the Decade, containing guidelines on policy measures to be taken at the national level and actions to be taken by the United Nations system, and providing for organizational and financial arrangements, including the setting up of a special high-level council, a scientific and technical committee and a secretariat. Information on the implementation of that decision follows. It can be observed that, in this first period of the Decade, the policy commitment embodied in the proclamation of the Decade by Member States of the United Nations as at 1 January 1990 has been consolidated through the progressive establishment of national committees and focal points for the Decade, which has required internal policy decisions and, in some instances, legislation. This gradual process indicates that the new emphasis on action to be taken before the occurrence of disasters, compared with the current prevailing trend of ex post facto response, is beginning to emerge.

## B. Policy measures at the national level

4. As proposed in recommendations of the International Ad Hoc Group of Experts (A/44/322/Add.1-E/1989/114/Add.1), that led to the launching of the Decade, the major focus for policies and activities designed to reduce the vulnerability of socio-economic systems to major hazards lies with the vulnerable countries themselves, as part of the national development process. In this early phase of the Decade, a growing number of countries have taken measures to develop national disaster mitigation programmes, which include economic aspects, the monitoring of the major natural hazards, the development of structural and non-structural measures, the establishment or improvement of early warning systems and the setting up of preparedness measures. Taken as a whole, all these steps will eventually become part of coherent national policies designed to reduce the impact of disasters. In these actions, a major part is being played, as recommended by the General Assembly, by the national committees for the Decade.

## C. National committees and focal points

5. National committees are established in cooperation with relevant scientific and technological committees and other concerned sectors. To date, close to 90 national committees or focal points have been set up, each with varying terms of reference and legislative authority; frequently, existing disaster management mechanisms have been restructured to reflect the newly recognized objective of disaster prevention and preparedness. A list of national committees for the Decade is given in the annex.

6. The growing number of national committees indicates that their pivotal role in implementing Decade activities at the national level has been recognized and that they will also be in a position to contribute at regional and interregional levels. National committees are in fact assisting in identifying national priorities, formulating and implementing disaster mitigation and prevention plans, developing and monitoring projects, as well as providing information and advice to concerned Governments, public services and related organizations, and to the general public sector as a whole. Naturally the composition of individual national committees varies in relation to a number of factors, including the level of development of the country concerned, the capacity and expertise available, and the frequency and nature of natural disasters likely to affect the country, as well as the level of awareness of the potential benefits of disaster mitigation.

7. One of the essential tenets of the Decade concept is that natural disaster mitigation policies should be effectively implemented with the assistance of national committees in the context of national development plans. In this light, it has been estimated that the material and economic impacts of a serious natural disaster in some countries can undo up to five years of hard-earned development progress. The more these impacts can be reduced, the greater will be the contribution of disaster reduction measures to the development process. Conversely, planning for development must take into account disaster vulnerability.

8. With that in mind and in order to prepare for the work of the Scientific and Technical Committee, the secretariat of the Decade has written to national committees with a view to identifying problems and gaps at the national level. The replies received to date indicate that few national committees are at this stage in a position to function effectively and it is obvious that many of them will need advice and support. There is clearly an urgent need on the part of Governments for information on the purposes and functions of national committees, on the optimum composition of such committees and on the contributions they can make to national development. These views have been recognized, particularly by the Scientific and Technical Committee, which has made a number of recommendations in this direction. The required advisory material, which was contained in the appendix to the Secretary-General's proposals for the launching of the Decade (see A/44/322-E/1989/114), will be updated and further disseminated through the IDNDR Newsletter, contacts with national committees and their planned regional meetings. In so doing, advantage will also be taken of the assistance of the United Nations resident coordinators at national levels, as well as the assistance of national emergency teams being established as a result of the ongoing United Nations Development Programme (UNDP)/Office of the United Nations Disaster Relief Coordinator (UNDRO) training programme mentioned later in the present report. The question of resources to support implementation of disaster mitigation policies has also been identified and will have to be addressed.

## D. Major meetings and events organized in connection with the Decade

9. It is encouraging to note that since the beginning of the Decade there has been a growing number of international, regional and national meetings relating to a wide variety of disaster mitigation aspects within the Decade. A calendar of major Decade-related events, which is also regularly updated and distributed, will be made available. More detailed information on a few of the more relevant meetings is given in the following paragraphs. The focus of these meetings indicates that increasing attention is being paid to enhancing the awareness of the potential benefits of disaster mitigation.

### International Decade for Natural Disaster Reduction International Conference (27 September-3 October 1990, Japan)

10. The purpose of this major Conference, held at Yokohama and Kagoshima and organized by the Government of Japan, the City of Yokohama, the Kagoshima Prefecture and the United Nations Centre for Regional Development, was to exchange ideas and experiences and to discuss international cooperation and regional development planning for natural disaster reduction. It was attended by some 1,300 administrators and scientists from 43 countries and 10 international organizations. The United Nations Disaster Relief Coordinator and the Director of the Decade secretariat both participated in the Conference, the proceedings of which were brought to the attention of the General Assembly at its forty-fifth session.

Workshop on Prediction and Perception of Natural Disasters (23-26 October 1990, Italy)

11. This tripartite meeting, organized by the Italian National Research Council, the United States National Science Foundation and the Decade secretariat, was attended by 70 experts from 21 countries and from United Nations and other intergovernmental and non-governmental organizations. The purpose of the workshop was to conduct an analysis of the relationship between scientific prediction and the actual perception in society of the threat presented by natural hazards. There is in fact a worrisome gap between the hazard assessment and prediction made by the scientific world and their understanding outside the scientific sector, particularly among the exposed population, the information media and the responsible authorities. A number of recommendations were made for follow-up action during the Decade.

Economic and Social Commission for Asia and the Pacific/Office of the United Nations Disaster Relief Coordinator Regional Symposium on the International Decade for Natural Disaster Reduction (11-15 February 1991, Thailand)

12. This Regional Symposium was organized and held at Bangkok by ESCAP, in cooperation with UNDRO and with generous financial support from Japan, to mark the launching of the Decade in the ESCAP region and identify regional priorities for implementation. Participants from 22 countries that are members and associate members of ESCAP attended. Representatives of organizations of the United Nations system, including the Director of the Decade secretariat, and representatives from other organizations also attended. The symposium covered all aspects of natural disaster reduction and prevention and produced a plan of action supported by numerous recommendations, including a proposal to create a policy-level committee at government level to oversee the activities of the Decade and the need to convene regional meetings of representatives of national committees leading to a global conference towards the middle of the Decade.

International Decade for Natural Disaster Reduction Think Tank meeting in preparation for the first session of the Scientific and Technical Committee (12-15 November 1990, Italy)

13. This meeting was convened by the Decade secretariat at the invitation of and with support from the Italian Minister for Civil Defence and with financial assistance from UNDP, in order to identify those tasks which could usefully be accomplished by the first session of the then newly established Scientific and Technical Committee, the membership of which had been announced by the Secretary-General on 6 November 1990. Participants included some members of the new Committee as well as some members of its predecessor, the International Ad Hoc Group of Experts, together with other experts from various government, academic and private sectors and the United Nations system. The meeting was highly productive and made extensive suggestions concerning intermediate targets to guide implementation activities in the context of a proposed framework programme for the Decade; the Think Tank also identified certain criteria for project approval, as well as many of the key

actors in the Decade. The meeting was the first step in the preparation of the inaugural meeting of the Scientific and Technical Committee.

Inter-Agency Working Group (18-20 December 1990, Geneva)

14. As a follow-up to the above meeting, this Working Group convened by the Decade secretariat brought together 19 experts representing 14 organs and organizations of the United Nations system. The sessions were chaired by the Director of the Decade secretariat and by the Deputy to the United Nations Disaster Relief Coordinator. The main purpose was to consolidate and refine the advice received from the Think Tank meeting with a view to facilitating the preparation of documentation for the Scientific and Technical Committee and the submission of appropriate project proposals for consideration. The meeting was successful in confirming the commitment on the part of the United Nations system to the effective implementation of the Decade.

Regional Round Table on Disaster Mitigation Policies and Management (29 April-3 May 1991, Manila)

15. This Round Table was jointly organized at Manila/Puerto Azul by the Development Policy Forum of the German Foundation for International Development (DSE) and the National Disaster Coordinating Council of the Philippines in consultation with the Asian Disaster Preparedness Centre of the Asian Institute of Technology. The event was supported by the Government of Germany. It initiated a policy-level dialogue on an adequate governmental framework for natural disaster prevention that would match the goals of the Decade with the needs and resources of individual Asian countries. It also discussed the possibilities of international cooperation in this field and respective regional networking. The Round Table was attended by senior representatives from governmental and non-governmental organizations from China, India, Nepal, the Philippines, Sri Lanka and Viet Nam, including members of the Scientific and Technical Committee. The Director of the Decade secretariat and representatives from the United Nations system, the World Bank and the Asian Development Bank participated. The United Nations Disaster Relief Coordinator was represented.

International Conference on Disaster Communications (20-22 May 1991, Tampere, Finland)

16. This Conference was hosted by the Government of Finland and the city of Tampere and covened by the International Institute of Communications, in association with UNDRO, the International Telecommunication Union (ITU), the Office of the United Nations High Commissioner for Refugees (UNHCR) and the League of Red Cross and Red Crescent Societies. The Conference received major support from the Aamulehti Group of Finland and the Annenberg Washington Program in Communications Policy Studies at Northwestern University. The Conference adopted the Tampere Declaration on Disaster Communications, which reiterates the urgent need to improve international cooperation in communications and enhance national capabilities in order to reduce loss of life, damage to property and livelihoods, and damage caused to the environment

caused by disasters. To this end, the Declaration calls for the development of a convention on disaster communications, which should be viewed in the context of a future comprehensive accord on disaster management. The Conference was attended by experts from the fields of communications and disaster management representing both the public and private sector, as well as the United Nations system. It was chaired jointly by the United Nations Disaster Relief Coordinator, the Secretary-General of ITU and the Secretary-General of the League of Red Cross and Red Crescent Societies, and received wide media coverage.

## E. The Scientific and Technical Committee

### First session of the Scientific and Technical Committee of the International Decade for Natural Disaster Reduction (4-8 March 1991, Germany)

17. The first session of the Scientific and Technical Committee of the International Decade for Natural Disaster Reduction was held at Königswinter, near Bonn, from 4 to 8 March 1991, at the invitation of the German National Committee for the Decade and with the financial support of the Government of Germany. The meeting was chaired by Mr. James P. Bruce (Canada); 22 of the 25 members of the Committee attended. Fourteen representatives of organizations of the United Nations system and representatives of other governmental and non-governmental organizations, such as the International Council of Scientific Unions, the World Federation of Engineering Organizations, the Union of International Technical Associations and the League of Red Cross and Red Crescent Societies also participated. Agreement was reached on specific targets for the Decade, on the scope and framework of a Decade programme, on means of stimulating national committees and other participants, on an information strategy and on eight international demonstration "mega"-projects to launch the Decade's technical activities. The Scientific and Technical Committee also attached importance to dealing with natural disasters as an integral part of national development plans and in a coherent manner in relation to environmental issues. The second session of the Committee is planned for September and it is expected that the annual report of the Committee will be available as an addendum to the report of the Secretary-General at the forty-sixth session of the General Assembly. The following paragraphs provide an outline of the main recommendations made by the Scientific and Technical Committee at its first session concerning targets, a framework programme and project development and public information:

#### (a) Targets for achievement

The International Framework of Action set out in the annex to resolution 44/236 identifies the objective of the Decade as to reduce the loss of life, property damage and social and economic disruption caused by natural disasters, and to that end indicates five specific goals, which together provide an overall direction for action. Many post-disaster studies have demonstrated convincingly that certain mitigation measures have significantly reduced losses when a natural hazard strikes. For example, land use policies

that avoid hazards and construction practices that enable structures to withstand severe stress have clearly saved lives and reduced damage. Thus, one way to assess progress of the Decade is to evaluate the application of proven loss reduction practices. Likewise the setting of targets will provide a yardstick of progress not only at the conclusion of the Decade but also in the course of its implementation.

In defining targets for the Decade, the Scientific and Technical Committee agreed that by the year 2000 all countries, some through regional arrangements, should have in place, as part of their plans to achieve sustainable development:

(i) National assessments of risks to populations from various types of disasters (e.g. floods, droughts, earthquakes, tropical cyclones, volcanoes, landslides, etc.);

(ii) National and/or local prevention and preparedness plans;

(iii) Access to global, regional, national and local early warning systems.

It also agreed on procedures for evaluating progress towards those targets.

The Committee further considered that achievement of those targets would require annual contributions to the International Decade for Natural Disaster Reduction trust fund of the order of 8 million United States dollars, of which $2 million would be necessary to support the Special High-Level Council, the Scientific and Technical Committee and the secretariat, and $6 million for seed money to stimulate appropriate projects at the field level. The total overall expenditure during the Decade would be much higher. Nevertheless, it was considered that the envisaged achievement of the targets could entail a potential reduction in loss of life by more than 50 per cent and reduction in financial losses due to damage by from 10 to 40 per cent, depending on the nature of the hazard. It will be recalled that present global losses have been estimated by the World Bank as being in the range of 250,000 deaths and $4 billion in damages per year.

(b) Framework programme

In considering a framework programme the Scientific and Technical Committee decided to adopt an activity structure that was common to all types of disaster rather than a structure based on the types of disaster. It therefore adopted seven major categories of technical projects:

(i) Identification of hazard zones and hazard assessment;

(ii) Vulnerability and risk assessment, cost/benefit analysis;

(iii) Awareness at the level of decision and policy makers;

(iv) Monitoring, prediction and warning;

(v) Long-term preventive measures, both structural and non-structural;

(vi) Short-term protective measures and preparedness;

(vii) Early intervention measures.

The seven categories would be supported by three key activities:

(i) Education, training and public information;

(ii) Transfer of technology;

(iii) Research on technology and policy.

(c) Project development

The concept of project development as conceived by the Scientific and Technical Committee necessitated consideration of three distinct procedures: the development of criteria for project approval, the identification of such projects and the selection of key projects requiring urgent implementation. In so doing the Committee identified a number of demonstration projects falling within the latter category, a list of which will be made available. Steps are being taken to develop detailed plans for the implementation of those projects, including costing, duration and benefits to be derived from them. Subsequently, donors, including the national Governments concerned, will be invited to contribute the necessary resources and technical support for implementation on either a bilateral or multilateral basis or through the trust fund for the Decade.

(d) Public information

In its resolution 44/236, the General Assembly requested the Secretary-General, in close association with the relevant organizations of the United Nations system, in particular through the Department of Public Information of the Secretariat, to assist in the formulation and implementation during the Decade of public information programmes aimed at raising public awareness of disaster prevention.

The Scientific and Technical Committee considered this matter in the light of previous proposals offered by the Rome Think Tank meeting and the Inter-Agency Working Group. In particular, it agreed on the structure of a possible information strategy for the Decade and identified target audiences, strategies and modalities for information exchange and dissemination, as well as supportive actions for information exchange and dissemination.

The publication of the first issue of the IDNDR Newsletter, "Stop disasters", published in cooperation with the Osservatorio Vesuviano, Italy, was especially welcome. The Newsletter assists in the exchange of information among national committees and at the same time encourages and promotes their involvement in the activities of the Decade.

As regards the celebration of International Decade for Natural Disaster Reduction Day 1991, the Scientific and Technical Committee proposed that celebrations centre on the theme "Disaster Prevention, Development and Environment" and requested the secretariat to develop an appropriate slogan. National activities were to be encouraged and every effort should be made to inform national committees of events being organized elsewhere. It was noted that the IDNDR Newsletter would be an appropriate vehicle for conveying this information.

The Committee also noted that a special logo was being designed for the Decade and suggested that it could be incorporated in postage stamps that might be issued by Member States to commemorate the Decade.

## III. ACTIVITIES OF THE UNITED NATIONS SYSTEM

18. In resolution 44/236, the General Assembly calls on organizations of the United Nations system and particularly UNDRO to assist countries in mitigating and preventing the effects of disasters. Most entities of the United Nations have initiated activities related to natural disaster prevention or mitigation, which are highlighted below, on the basis of information submitted by them.

### Office of the United Nations Disaster Relief Coordinator

19. UNDRO is the only specialized body in the United Nations that deals exclusively with disasters and is the focal point for disaster management in the United Nations system. The tasks of UNDRO in relation to natural disasters encompass the complete disaster cycle, from the early warning phase preceding the actual impact or occurrence through the emergency management and response phase to the inclusion of disaster prevention aspects in reconstruction and rehabilitation and, finally, covering the issue of longer-term disaster mitigation, that is, applied disaster reduction as part of the development process. It is thus obvious that the majority of UNDRO activities during the reporting period have been directly related to the realization of the goals of the Decade.

20. UNDRO has continued to offer its specific expertise to the Decade secretariat and other entities within the Decade mechanism, inside and outside the United Nations, and has participated in the identification and evaluation of projects for possible inclusion in the programme of the Decade. In fact, UNDRO has developed several innovative approaches towards applying the Decade concept in a qualitative manner and going beyond a mere increase in volume. At the beginning of the Decade in particular, it has been considered imperative to initiate selected projects that successfully represent as many of the specific goals of the Decade, as possible and as such support and promote the establishment of concerted national strategies for its implementation.

21. On one side, the Relief Coordination Branch has continued to evaluate national and international disaster response and coordination activities in order to provide indicators on remaining gaps in those fields and to initiate adequate development, whether by streamlining the institutional or legal framework for emergency response or by upgrading the technical tools, that is, communication or information management systems, to secure a higher level of efficiency. A major search-and-rescue initiative has been undertaken within which an international workshop was held in cooperation with the Government of Austria. UNDRO has also continued its efforts to implement the recommendations of the International Conference on Disaster Communications of March 1990, organized within the International Decade for Natural Disaster Reduction, with the support of the Government of Germany.

22. On the other hand, the Disaster Mitigation Branch has strengthened cooperation with all its partners in disaster mitigation, particularly the specialized agencies of the United Nations, the national committees for the Decade, Governments, regional institutions, the scientific and technical community, and, of course, the Decade's institutions, with the secretariat foremost. It has assisted countries at risk through, inter alia, projects of disaster preparedness, training activities and the formulation of pre-disaster plans, feasibility studies on national and regional disaster management, and seminars and workshops on long-term disaster mitigation.

23. Since the beginning of the Decade, such mitigation activities have been started or are being executed at country level in Chile, China, Colombia, Ecuador, Egypt, Grenada, Indonesia, Iran, Nepal, the Philippines, Somalia, Thailand and the Union of Soviet Socialist Republics. On a regional level, UNDRO engaged in mitigation projects on the Caribbean, the Mediterranean and the South Pacific. After 10 years of successful disaster mitigation within the Pan-Caribbean Disaster Preparedness and Prevention Programme, and with the active participation of UNDRO, the experience gained is being translated into a new phase of regional cooperation in disaster management. In the Mediterranean region, within the Cooperative Project for Seismic Risk Reduction, all Mediterranean countries prone to seismic hazard are actively coordinating their efforts to apply existing scientific knowledge and technology to seismic hazard analysis, seismic vulnerability and risk assessment, and practical risk reduction. In Fiji, UNDRO has opened its South Pacific Project Office in cooperation with UNDP and at the request of the Governments of the South Pacific region in order to identify, and assist in, activities of pre- and post-disaster management that implement the goals and objectives of the Decade.

24. Discussions at various levels during the early phase of the Decade have clearly identified the need to assess and standardize terminology used in interdisciplinary and field/office communication in disaster-related activities. To this end, UNDRO is aiming at a widely accepted and coordinated glossary of terms in cooperation with and on the basis of existing partial terminological efforts of all concerned national institutions and international governmental and non-governmental organizations.

25. Continued and particular emphasis has been placed on two important strategic efforts to improve disaster management capabilities world wide. Together with UNDP, UNDRO has begun implementing the joint UNDRO/UNDP Disaster Management Training Programme. This programme aims at further professionalizing disaster management at the country level and within the United Nations system as a whole through sensitization, team-building and the provision of knowledge in order to integrate preventive planning firmly into the national development process. Policy makers are being made aware of the importance of according appropriate priority to the issue of disaster reduction, motivated to assess their national gaps and needs in this field and encouraged to develop national programmes and projects for international technical cooperation.

26. In the field of disaster-related information management, UNDRO has embarked on a project that builds on the existing United Nations International Emergency Network (UNIENET) and aims at creating an interactive electronic network for emergency management and disaster reduction purposes alike. Based on state-of-the-art technology, the system will comprise technical means for fast and reliable communication within the disaster management community, inform about available disaster-related information at all levels, provide access to such information sources and develop and maintain a limited number of core databases such as disaster statistics and a historical database. Within the project, countries at risk will be assisted to develop their own disaster-related data management systems, which can be integrated into the future global network.

Economic Commission for Europe

27. ECE has a number of specific activities related to the activities of the Decade, in particular in the areas of seismic events, forest fires, pollution and damage caused by storms, particularly in forest regions. Projects in each of these areas are being developed for implementation as Decade activities.

Economic and Social Commission for Asia and the Pacific

28. ESCAP covers a region with an overall population of about 3 billion, with 45 million more being added every year, and many of its member developing countries are situated in the world's hazard belts for earthquakes, windstorms, tidal waves, floods and drought. By some estimates, 85 per cent of the more than 4 million deaths from sudden natural disasters in the world in the period 1900-1990 occurred in Asia and the south-west Pacific. For the same period, windstorms and floods world wide accounted for almost 50 per cent of the nearly $100 billion total damage.

29. The frequency and intensity of adverse natural phenomena and the extensiveness and severity of the damage they cause seem to be increasing over time. Disastrous natural events struck the region again in 1988, 1989 and 1990 even before the full consequences of the adverse weather effects on the economies of the region in 1987 could be fully overcome. Cyclones, floods and drought affected the agricultural production of virtually the whole developing ESCAP region and very recently, in 1991, in a particularly disastrous way.

30. Losses due to natural disasters deprive developing countries of resources that could otherwise be used for economic and social development, thus further impeding their development process.

31. ESCAP's main activities in disaster mitigation address water-related disasters, the reduction of the impact of drought, the reduction of geologic disasters and disaster monitoring and warning. A study has been prepared on problems caused by natural disasters in selected least developed countries and island developing countries. A project on urban flood loss prevention was completed and a flood prevention manual is being published. Further water disaster projects are being initiated, including an assessment of the status of prevention in the region, and topical symposia on items of special interest are being organized.

32. In order to improve satellite crop monitoring, a regional evaluation seminar was held, which produced proposals for continuing the previous phase of this undertaking. Ongoing studies on geology for urban development and land use still continue and the resulting hazard maps have demonstrated their usefulness, particularly in human settlement planning. Remote-sensing techniques for the monitoring of natural disasters will continue to be examined, with a view to improving their use for least developed countries through transfer of technology.

World Food Programme

33. WFP is the food aid agency of the United Nations system and its main mandate in disaster situations is to respond to needs in the aftermath of an emergency. However, in its food-for-work activities in disaster-prone countries, WFP makes every effort to buttress the disaster prevention and preparedness structures, and to reinforce the people's capacity to withstand major food deficit crises. Projects are therefore prepared to take account of the national Decade committee programmes when these embrace people's food security considerations. These projects can be in various sectors of economic activity, but include mostly agroforestry, conservation of forests to stabilize hillsides and dune stabilization; physical conservation works, comprising various activities specifically designed to reduce the effects of natural disasters such as landslides, soil erosion, floods and storms; and rangeland management, protection of pastures and destocking and restocking of herds to reinforce the capacity of livestock herders to face up to seasonal and normal droughts.

34. Projects are currently being implemented in Bangladesh, China, Kenya and Indonesia.

World Health Organization

35. The involvement of WHO in disaster reduction has long stressed the importance of preventive measures and emergency preparedness. Moreover, WHO has given priority to linking disaster reduction measures to long-term development activities that ultimately strengthen the health preparedness and response capacities of its member States.

36. WHO has continued its support for the Decade through both headquarters and its regional offices and programmes. This has included part-time secondment to the Decade secretariat.

37. Recognizing the need to promote disaster reduction initiatives in health, WHO declared the theme of World Health Day 1991 as disaster preparedness. Preparations for this global event, which took place on 7 April, included development of an information kit and a children's poster competition. Moreover, WHO produced a public information brochure entitled "Should Disaster Strike ... Health in the International Decade for Natural Disaster Reduction", and a video, "Before Disaster Strikes", now available in English and French.

38. The first WHO Expert Panel on Emergency Relief Operations was convened at Geneva from 11 to 15 March. This defined in detail the scope of WHO's role in disaster prevention and preparedness.

39. In addition to headquarters initiatives taken to support the Decade, WHO's regional programmes have also promoted it. The Pan-American Health Organization (PAHO) has played a key technical role in implementing the first regional training of trainers course in Colombia as part of the Disaster Management Training Programme. This has been undertaken in collaboration with the Organization of American States (OAS), UNDRO and UNDP. Such inter-agency cooperation is expected to be applied in the regional training activities to be undertaken in Africa, in cooperation with the WHO Pan-African Centre for Emergency Preparedness and Response at Addis Ababa.

40. Following the endorsement of the Scientific and Technical Committee, the Emergency Preparedness and Response Programme of PAHO is currently preparing to convene a regional meeting of representatives of national committees for the Decade and other key government departments in September 1991.

41. WHO's Regional Office for South-East Asia at New Delhi will for the first time conduct technical discussions on disaster management when its Regional Committee convenes in the last quarter of 1991.

42. In the South Pacific, WHO has established close working links with UNDRO and UNDP in regional disaster mitigation, specifically reflected in the development of a pilot health sector project in Samoa.

43. These Decade initiatives reflect WHO's priority to work closely with partners at the national level as well as with United Nations and non-governmental agencies to support sustainable disaster reduction efforts in health world wide.

World Meteorological Organization

44. WMO has responsibility within the United Nations system for activities relating to meteorology, climatology and operational hydrology. Within the context of the Decade, the Organization takes a leading role concerning mitigation of disasters caused by (a) tropical cyclones; (b) floods;

(c) tornadoes and severe thunderstorms; (d) other severe weather phenomena such as storm surges and major snowstorms; (e) landslides and avalanches; and (f) droughts.

45. WMO contributes to the mitigation of other types of disaster by its involvement in the meteorological and hydrological aspects of insect plagues and in the dissemination over its Global Telecommunication System of tsunami warnings. WMO activities related to drought are covered in the paper "WMO Strategy on Drought and Desertification".

46. The WMO secretariat has participated actively at all levels in Decade activities; a WMO staff member and a consultant have been seconded to assist in the work of its secretariat.

47. The WMO Plan of Action for the International Decade for Natural Disaster Reduction, which sets out the varied actions that are being undertaken as the Organization's contribution to the Decade, was adopted by the Eleventh World Meteorological Congress, in May 1991.

48. Specifically, in many developing countries, the two great impediments to improvements at national level in the near term are (a) a lack of knowledge and expertise in the technology concerned; and (b) lack of funds to install, operate and maintain systems using existing technology and procedures.

49. The basic requirements to overcome these impediments are technical cooperation activities with an emphasis on technology transfer and/or institution-building, provision of equipment and facilities, and human resource development.

50. As a first step as regards special projects for the Decade, WMO has developed plans for three relatively low-cost projects specifically geared to the goals of the Decade. These should be very cost-effective and have a significant impact at both international and national levels. The three projects concern a tropical cyclone warning system for the south-west Indian Ocean region; comprehensive risk assessment; and technology exchange for natural disasters.

51. Contact has been established with the International Seismological Centre with regard to the second and third projects.

52. Plans have also been drawn up by WMO for a series of regional technical cooperation projects in connection with the Decade and negotiations are under way for their funding.

53. A video and special brochure have been produced by WMO, emphasizing the special role to be played by meteorological and hydrological services in the mitigation of natural disasters. These have proved most successful in publicizing the Decade and encouraging participation at the national level.

Food and Agriculture Organization of the United Nations

54. FAO has continued its active participation in the arrangements for the Decade.

55. FAO has set up an informal interdepartmental group for the coordination of inputs to the Decade.

56. The support provided to the Decade is in the context of FAO's constitutional role in all matters related to food and agriculture, in particular, its mandate for the development, utilization and conservation of natural resources. Many if not most of FAO technical capabilities and assistance activities are relevant to rational management of natural resources. These same capabilities relate to natural disaster assessment, prevention, preparedness, mitigation and relief rehabilitation.

57. In this context, cooperative activities between FAO and other United Nations organizations and bodies include the arrangements concluded recently between FAO and UNDRO with a view to strengthening information exchange through their respective information systems, the Global Information and Early Warning System of FAO and the United Nations International Emergency Network of UNDRO. Under these arrangements, UNDRO has made a "window" available in its Network to other emergency databases and bulletin boards, as well as to other network users through electronic mail. The facility is now operational.

58. The coordinating role played by FAO in the monitoring and control of the desert locust and other migratory pests through its Emergency Centre for Locust Operations has continued. This central reporting and forecasting service assists member countries and regional organizations in their efforts to monitor and contain infestations.

59. The creation in 1988 of the Africa Real-Time Environmental Monitoring Information System (ARTEMIS), a satellite data receiving and processing system operational at the FAO Remote Sensing Centre at Rome since August 1988, has proved to be a useful instrument also with respect to disaster-related activities. ARTEMIS is a joint undertaking by the National Aerospace Laboratory of the Netherlands, in cooperation with the United States space agency NASA and the University of Reading in the United Kingdom of Great Britain and Northern Ireland, funded by the Government of the Netherlands through a special FAO trust fund.

60. ARTEMIS provides a wealth of data and images, produced in real time, which permit, inter alia, the monitoring of the status of the rainy season over Africa and hence the provision of timely information for use by systems that address early warning for food security and locust monitoring and control operations.

61. In order for these data to be made available in a timely manner to the most interested parties, the developing countries, FAO has joined forces with the European Space Agency (ESA) to create DIANA (Data and Information now Available in Africa), a special satellite communications system that enables

the direct transmission of the ARTEMIS data to users at regional and national levels. It is expected that DIANA will begin its demonstration phase by November 1991, starting with a user terminal at Nairobi, and possibly at Accra and Djibouti.

United Nations Educational, Scientific and Cultural Organization

62. The UNESCO subprogramme on natural hazards has been aligned with the goals of the Decade. It concerns the development of scientific and technical knowledge and the means to understand the causes of natural disasters and to mitigate their effects.

63. The interdisciplinary approach has been broadened to include not only the scientific and technological aspects of risk evaluation and mitigation, but also the educational and social aspects.

64. The promotion of national and regional monitoring networks for earthquakes, volcanoes, landslides and tsunamis has been enhanced. The International Mobile Early Warning System for Volcanic Eruptions continued to operate. The design and construction of disaster-resistant educational buildings are being encouraged increasingly, as is the protection of cultural monuments against the violent forces of nature.

65. A special project concerning the preparation of training materials for natural disaster reduction has been launched by UNESCO, with financial support from European donor countries. The establishment of an international institute for earthquake engineering and seismology in Central Asia has started under UNESCO supervision. The First International Conference on Seismology and Earthquake Engineering and the International Forum on Seismic Zonation were organized under the aegis of UNESCO.

66. The contribution of UNESCO to the United Nations Conference on Environment and Development will take into consideration the Decade. UNESCO's intergovernmental programmes, such as Man and Biosphere, the International Hydrological Programme and the International Geological Correlation Programme, as well as the programmes of the Intergovernmental Oceanographic Commission, have contributed to the activities of the Decade.

67. The study of snowmelt and flash floods, of extraordinary rainfall and of water hazard reduction in low-lying coastal regions, particularly regarding sea-level changes, has been accelerated. The ongoing build-up of scientific capacities of Sahelian countries in the field of agro-sylvio-pastoral management is being strengthened significantly in a longer-term UNESCO project.

68. A video on the understanding of volcanic hazards has been produced by UNESCO. The organization is also printing a promotional brochure describing its potential contribution to the Decade.

International Civil Aviation Organization

69. ICAO moved swiftly to amend its regulatory documents to include requirements to provide volcanic ash warning to aircraft. In order to support the warning system, ICAO sought help from States and international organizations to form an international airways volcano watch based on an observing triad comprising aircraft reports, reports from ground-based observing stations and monitoring by satellite.

70. Participating in the watch are the International Air Transport Association and the International Federation of Air Line Pilots' Associations, which provide special air reports of volvanic activity; WMO, which arranges the provision of observations of volcanic activity from all the many international ground-based observing networks and coordinates the use of meteorological satellites and techniques for forecasting volcanic ash trajectories; and the World Organization of Volcano Observatories, which arranges for critically important observations from volcano observatories strategically sited near active volcanoes.

71. Current work is concentrated on consolidating and extending the international airways volcano watch and improving the warning system based on operational experience gained during volcanic eruptions near air routes in South-East Asia and North America.

The United Nations Centre for Human Settlements (Habitat)

72. In keeping with pertinent decisions of the Commission for Human Settlements, Habitat has kept up the pace of its assistance to Governments in various aspects of pre-disaster planning, preparedness and mitigation as they affect human settlements. In the area of seismic disasters, a scientific and technical report on post-earthquake reconstruction of human settlements in northern Armenia and follow-up recommendations as to appropriate measures to be taken in order to mitigate the effects of future telluric activity in the region has been prepared and submitted to the Government of the Soviet Union. A video film and a publication on mitigation of the effects of earthquakes on human settlements, containing the proceedings of a symposium held at Tbilisi (Georgian SSR) is being prepared for world-wide distribution. Upon the request of the Government of the Philippines, Habitat has assisted in the formulation of recommendations on the reconstruction of the earthquake-affected areas of the country. In central and eastern Nepal, Habitat is assisting the Government in enhancing the institutional capacity of the Ministry of Housing and Physical Planning to formulate, managing and monitoring reconstruction and rehabilitation programmes of houses, hospitals and basic infrastructure in the earthquake-affected areas of Nepal. In the Guilan and Zanjan provinces of Iran, the Centre is providing immediate technical assistance to post-earthquake reconstruction and rehabilitation, and is assisting with coordination of the mobilization and channelling of international contributions and assistance. The assistance also includes elements to enhance the Government's long-term disaster mitigation programme.

73. As regards floods, a rehabilitation and reconstruction programme for flood-damaged areas in Kashur Tehsil in the Punjab Province of Pakistan is in progress and is intended to serve as a model for demonstration and replication. Covering nearly the whole of Bangladesh, a reconstruction programme for rural housing in flood-affected areas has been set up in order to improve the supply, delivery and durability of building materials and techniques, and to identify proven, replicable housing delivery systems and programmes that are flood-mitigating and will form part of a national rural housing strategy. Following the devastations caused by Typhoon (No. 6) Irving, Habitat provided assistance to Viet Nam to develop and apply training materials and appropriate low-cost disaster-resistant building techniques. In the area of information dissemination, the Centre is currently preparing a manual on planning and management for disaster reduction.

## IV. ORGANIZATIONAL AND FINANCIAL ARRANGEMENTS

### The role of the Decade secretariat

74. The secretariat functions as catalyst, coordinator, stimulator, adviser and facilitator within the Decade community. Its main tasks include making contact with the various constituencies involved in Decade activities, organizing and participating in meetings and providing the necessary substantive and secretarial assistance to the other organizational elements established by the Decade, namely, the Special High-Level Council and the Scientific and Technical Committee. The secretariat is therefore seen as a centre for information and coordination, whereas operational responsibilities lie with Governments, UNDRO and other organizations of the United Nations system and other participants in the Decade, as requested by the General Assembly.

75. As seen in preceding paragraphs, the Rome Think Tank, the Inter-Agency Working Group and finally the Scientific and Technical Committee have all paid particular attention to ways and means of involving all potential participants in the activities of the Decade and come up with numerous proposals and recommendations, including many related to a much more active involvement of the private sector and particularly the insurance and financial institutions. In consultation with the Scientific and Technical Committee and in cooperation with UNDRO and other organizations of the United Nations system, the secretariat intends to pursue these avenues with a view to the full involvement of all interested parties in the Decade activities.

### Trust fund

76. In its resolution 44/236, the General Assembly recommended that extrabudgetary resources be provided for implementation of Decade activities and therefore that voluntary contributions from Governments, international organizations and other sources, including the private sector, be strongly encouraged. To this end, it requested the Secretary-General to establish a trust fund, entrusted to his administration.

77. For implementation of Decade activities (in addition to national contributions), the situation of the fund is far from satisfactory. In 1990, a major contribution of $450,000 was received from Italy and the Government of France also made a contribution to the trust fund. A major contribution of a project character was received from the Federal Republic of Germany, as were some smaller project contributions from other countries. In 1991, a contribution of $408,000 was provided by Finland. In addition, Japan contributed $500,000 to the Human Resources Development Fund of UNDP for disaster mitigation activities in connection with the Decade.

78. In addition, support has been received from the United States of America through the financing in the amount of $350,000 of the secondment of a senior staff member to the secretariat. Likewise, WMO has assigned a senior staff member to assist the secretariat on a part-time basis and in 1990 also provided a consultant. WHO has also made available a staff member to assist on a part-time basis.

79. Clearly, urgent action is necessary if the trust fund is to support the activities of the Decade and the organizational units such as the Special High-Level Council, the Scientific and Technical Committee and the secretariat of the Decade.

## V. CONCLUSIONS

80. It can be observed that in the period under review Member States have continued to gear up for the Decade, awareness of potential mitigation has increased as a result of workshops, topical activities and consultations, and United Nations agencies and non-governmental organizations, particularly those in the scientific sector, have engaged in serious efforts to develop projects and activities leading to improvement of the capacity to monitor hazards, with the ultimate objective of reducing vulnerability.

81. Some important tasks that lie ahead include:

(a) Study of the economics of disaster management, in particular a cost/benefit analysis of disaster mitigation;

(b) Integration of disaster vulnerability assessment in the national development process, with a view to ensuring that future investments and projects do not add to the overall vulnerability level, but on the contrary assist in reducing society's exposure to hazards;

(c) Commitment of new resources or programming of existing ones in such a way that disaster mitigation, once it has been recognized as a policy priority, also becomes a priority for implementation.

82. In order to achieve progress in the above areas towards the goals of reducing the number of victims and the damaging impact of disasters, continuing interaction with and support for national Committees for the Decade

will be required. As this is certainly a priority concern for implementation of the Decade, efforts will be made to enhance the support provided to national mitigation policies, through assistance to the national committees.

83. The demonstration projects that have been identified by the Scientific and Technical Committee constitute, in the context of the framework programme, a considerable body of disaster mitigation activities with an important potential for disaster vulnerability. It is now essential that, as specifically recommended by the General Assembly in paragraph 13 of the International Framework of Action for the Decade, they be taken into account in bilateral and multilateral cooperation; this is a necessary step in order to translate policy recommendations into actual activities having an effect on the reduction of mankind's exposure to natural disasters.

84. A major effort must be undertaken to implement a public information and education strategy for the Decade. In this early phase, the potential benefits of disaster mitigation must be explained and emphasized to inform adequately public opinion, policy makers and operational authorities of the possible ways and means to participate in the world wide effort to reduce losses of lives, material damage and economic disruption during the 1990s.

Annex

List of addresses of national committees and/or focal points

(As at 3 June 1991)

Mr. Dastagir Sadaqui
President
Office of Disaster Preparedness
Council of Ministers
Kabul
Republic of Afghanistan

Comité National des Risques Majeurs
Direction Générale de la Protection Civile
Ministère de l'Intérieur
Alger
Algérie

Mr. John DeNully
Chairman
National Disasters Services
American Road, St. John's
Antigua

Commodore C.J. Littleton, RAN
Director-General
Natural Disasters Organization
Department of Defence
P.O. Box E33
Queen Victoria Terrace
Canberra, ACT 2600
Australia

Prof. Dr. S.J. Bauer
Chairman, Austrian National Committee
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c/o Osterreichische Akademie der
Wissenschaften
Dr. Ignaz-Seipel-Platz 2
A-1010 Wien
Austria

Dr. E. Kussbach
Minister
Austrian Ministry for Foreign Affairs
Abt. 42
Ballhausplatz 2
A-1014 Vienna
Austria

Hon. Sir Clement T. Maynard
Deputy Prime Minister
Chairman, National IDNDR Committee
P.O. Box N 3701
Nassau
Bahamas

Mr. Abdul Rahman Al Khalifa
Focal point for disaster relief
Director
Civil Defence and Fire Brigade
Ministry of Interior
P.O. Box 13
Manama
Bahrain

National Disaster Prevention Council
Ministry for Relief and Rehabilitation
Building No.4
Bangladesh Secretariat
Dhaka
Bangladesh

National IDNDR Committee
Académie Royale des Sciences,
Lettres et Beaux-Arts
Bruxelles
Belgium

National Office of Emergency Management
Mr. Henry Gordon
The Permanent Secretary
Prime Minister's Office
Belize City
Belize

Mr. Tshering Tashi
Head of National Environmental
Secretariat
Planning Commission
Thimphu
Bhutan

Eng. Sr. Adolfo Vargas
President
Bolivian National Committee for IDNDR
P.O. Box 11253
La Paz
Bolivia

The Department of Welfare, Youth
and Sport
Bandar Seri Begawan
Brunei Darussalam

Dr. M. Brainov, Vias
c/o Union des Travailleurs
Scientifiques de Bulgarie
1504 Sofia
Rue Oborichte
Bulgaria

Commission nationale de lutte
contre les effets de la sécheresse
Focal point for IDNDR
Burkina Faso

Dr. Alan Davenport
Chairman, Committee for IDNDR
Boundary Layer Wind Tunnel Lab.
University of Western Ontario
Faculty of Engineering Science
London, Ontario N6A 5B9
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Colonel Didace N'Dayen
Président du Comité national de lutte
contre l'incendie, le feu de
brousse et autres calamités
B.P. 1859
Bangui
République centrafricaine

Dr. Edgar Kausel
Chairman, National IDNDR Committee
Universidad de Chile, Facultad de
Ciencias Fisicas y Matematicas
Departmento de Geologia y Geofisica
Blanco Encalada 2085 - Casilla 2777
Santiago
Chile

Mr. Chen Hong
Director, Dept. of Natural
Disaster Relief
Ministry of Civil Affairs
No.9 Xi Huang Chen Gen Nan Jie
Beijing
China

Mr. Camilo Cardenas Giraldo
Chief, National Office for
Disaster Assistance
Calle 7 No. 6-54, Piso 3,
Bogota
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Comisión Nacional de Emergencia
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Mr. Jose Angel Llanes Guerra
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Oficina de Desastres
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Ambassador Anders Brandstrup
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Mr. R.J. Clarke
National Disaster Co-ordinator
Prime Minister's Office
Government Headquarters
Roseau
Commonwealth of Dominica

Office of the Civil Defence
Focal Point for IDNDR activities
Via the Technical Secretariat
of the Presidency/ONAPLAN
Santo Domingo
Dominican Republic

National Civil Defence Directorate
Quito
Ecuador

The Academy for Scientific
Research and Technology
Focal Point for IDNDR
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Mr. P. Myllyniemi
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Chief Director
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P.O. Box 257
SF 00171 Helsinki
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Mr. J. Aubouin
Président du Comité national français
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Laugavegur 118-D
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Mr. R.C. Chowdhury
Joint Secretary and Additional
Relief Commissioner
Ministry of Agriculture and Cooperation
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Office of the Minister Co-ordinator
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Jl, Medan Merdeka Barat 3
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Dr. Dan Litai
Focal Point in Israel for IDNDR
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of Dangerous Goods and Natural Hazards
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